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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,111

09/19/2006

Hermann Randecker

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EXAMINER

HOWELL, DANIEL W

ART UNIT

PAPER NUMBER

3726

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,111	Applicant(s) RANDECKER ET AL.	
	Examiner Daniel W. Howell	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The examiner will make several comments about Applicant's arguments before making actual rejections. Regarding German '718, Applicant has argued that surface 38 is merely a chip surface adjacent a cutting edge. Applicant then cites a portion of an esp@cenet EPO translation to conclude that surface 38 is a planer surface which forms a 0 degree rake angle. When one looks at page 15/17 of the translation submitted by Applicant, it is noted that some words of this translation were not actually translated. The examiner is not sure if the EPO website that the USPTO examiners use is different from the website that Applicant used, but the attached translation that the examiner has obtained from the EPO sure is different than Applicant's. As seen from the middle of page 3 of the translation cited by the examiner, the surface 38 leads to a step 41, which constitutes a **chip breaker**. Frankly, looking at figure 2 of German '718 by itself, one skilled in the art immediately knows that the surface 38 leads the chip to steps 41 for their breakage. It is further noted that German '718 is not so specific to state that the surface 38 has a 0 degree rake angle. Applicant stated regarding Nuzzi et al that "there is no disclosure that the rake angle 80 aids in breaking the chips." Those skilled in the art know well that these grooves adjacent the cutting edges are used for forming/curling and breaking of the chips. See the following references which are ALL already of record: Mackey '381 (column 2, lines 45-55); Kallio '081 (column 2, lines 50-64); Searles '463 (column 2, lines 33-41); and Faber '863 (column 2, lines 45-54). All of these references discuss the concept of the chip being guided along a groove adjacent to the cutting edge to a stepped corner/edge, such that the chip will **break**. Nuzzi et al shows the very same type of groove and corner/edge for breaking the chip. Regarding claim 15, Applicant has argued that the Office action provided no reason why claim 15 was rejected. As will be discussed below, that simply isn't correct either, as the examiner was

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quite explicit of where Nuzzi et al shows the features of claim 15. Nevertheless, it is notoriously common to first machine the cutting surface and THEN provide the coating. This concept is so common that it is even discussed in the Tool and Manufacturing Engineers Handbook, a well known reference book. As stated in the discussion of *Surface treatments* on page 9-15 of the Handbook, "These treatments are normally applied after the drills have been finish ground." One skilled in the art will clearly know that grinding the surfaces after applying the coating will know that this will remove the applied coating, such that there is good reason to grind the surfaces first.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over German 3314718 in view of Nuzzi et al (6135681). Figures 2a and 2b of German '718 show a single-lip gun drill having a cutting edge 40 and an adjacent chip forming/breaking groove 38 that leads to steps 41. The German reference does not appear to give explicit details about the groove. Nuzzi et al shows a cutting edge 64 and an adjacent U-shaped groove 75 for forming a positive rake angle 80. See column 6, lines 40-51, and figure 8. The positive rake angle 80 helps form the chips, and the U-shaped groove aids in breaking the chips. As disclosed at column 7, lines 19-29, the tool may be coated with suitable coatings, including TiAlN. Lines 30-40 of column 6 and column 7, lines 19-22 of column 7, discuss manufacture of the insert from a blank by machining the surfaces, and column 7, lines 23+ state, "These base materials **can then be coated with hard**

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coating materials....” The words “can then be coated” clearly indicate that the cutter is coated **after machining of the cutting surfaces**. Note that Nuzzi et al also states that various combinations of these or other coatings can be used to accommodate numerous applications. It is considered to have been obvious to have provided German ‘718 with the U-shaped groove having a positive rake angle as taught by Nuzzi et al in order to greatly facilitate chip formation and breakage (column 6, line 43, Nuzzi et al), and to provide German ‘718 with the coating and layers of coatings of Nuzzi et al in order to provide hardness and edge retention qualities.

Regarding claim 16, it is considered to have been obvious to have provided the coating after resharpening or regrinding, as those operations would otherwise remove the coating. While the angle 80 as shown in figure 8 may be measured as being about 16 degrees, and the chip break surface of Nuzzi et al is a certain distance from the cutting edge, it has been held that patent drawings are not to be taken as drawn to scale unless the reference states that it is to scale. It is considered to have been obvious to have experimented with various rake angles and distances and to have provided a value of between 10 and 30 or 15 and 25 degrees, and to have provided a distance of between .3 and .6 mm, depending on the particular characteristics of the material being drilled.

4. Applicant's arguments filed 8-11-08 have been fully considered but they are not persuasive. As discussed above, German ‘718 does indeed show a single lip tool with a chip breaker adjacent the groove, and Nuzzi et al has been applied to show the actual chip breaking configuration that Applicant has claimed. Regarding Nuzzi et al, Applicant has argued, “There is no disclosure that rake angle 80 aids in breaking the chips.” As discussed above, those skilled in the art know that the groove of Nuzzi et al is for curling and breaking the chips. The examiner

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has listed numerous references above which discuss such grooves for curling and breaking the chips. While Applicant points out that Nuzzi et al shows grooves 82 to break chips, those grooves are merely for providing chips of a small width that will easily flow through the flutes, and they have not been relied upon in this rejection. The groove 75 of Nuzzi et al will cause the chip to break along its length. Applicant has argued that Nuzzi et al is "not relevant prior art" as it is directed to a cutting insert to be placed into a tool holder. This argument is not well taken. Nuzzi et al and German '718 both clearly show rotary metal cutting tools having cutting edges and arrangement for breaking the chips adjacent the cutting edges. It is relevant because it is a similar rotary cutting tool for making a hole. Applicant's argument that the examiner did not provide a reason why claim 15 is unpatentable is incorrect. The examiner explicitly directed Applicant's attention to column 7, lines 19-29, of Nuzzi et al. Nuzzi et al discloses that the cutting surfaces are machined, and then the base material "can then be coated." This definitely states that the coating is done after the machining of the cutting surfaces.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning the content of this communication from the examiner should be directed to Daniel Howell, whose telephone number is 571-272-4478. The examiner's office hours are typically about 10 am until 6:30 pm, Monday through Friday. The examiner's supervisor, David Bryant, may be reached at 571-272-4526.

In order to reduce pendency and avoid potential delays, Group 3720 is encouraging FAXing of responses to Office actions directly into the Group at FAX number to 571-273-8300. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Daniel Howell of Art Unit 3726 at the top of your cover sheet.

/Daniel W. Howell/

Primary Examiner, Art Unit 3726